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THE Feed SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

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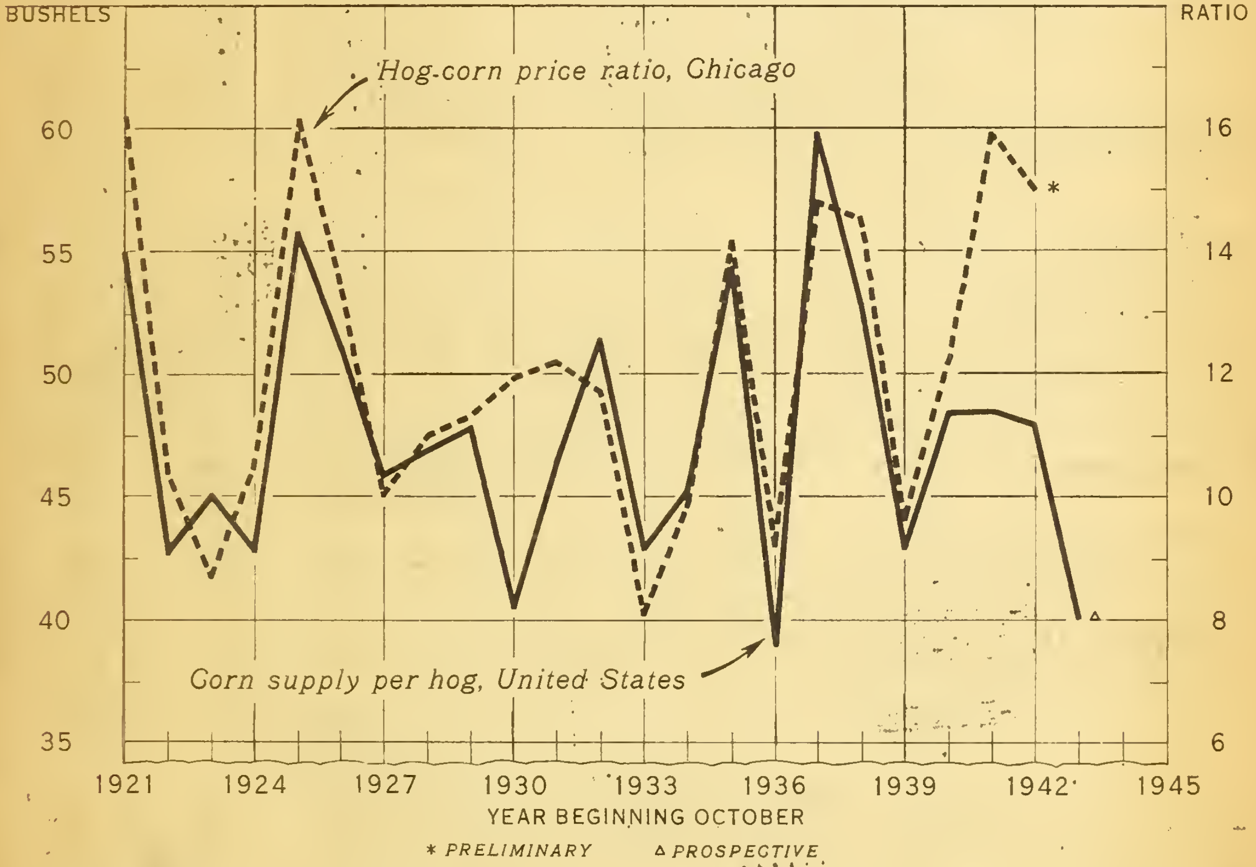
RELATION OF LIVESTOCK-FEED PRICE RATIOS TO FEED SUPPLIES AND LIVESTOCK PRODUCTION

CORN SUPPLY PER HOG, AND HOG-CORN PRICE RATIO, 1921-43



U. S. DEPARTMENT OF AGRICULTURE NEG. 43113 BUREAU OF AGRICULTURAL ECONOMICS

The ratio of feed prices to livestock prices normally is associated with the size of the feed supply per head of livestock. In the past 2 years feed prices have been unusually low relative to livestock prices, reflecting ample feed supplies and the release of Government-owned corn and wheat for feeding. Smaller supplies of feed are in prospect for 1943-44 and there will be a strong tendency for ratios to shift to lower levels, which would make livestock feeding less profitable and assist in the orderly readjustment of livestock production to levels consistent with feed supplies.

Table 1.- Market prices of feeds and livestock-feed price ratios, June 1941, 1942, and April-June 1943

Item	Unit	June 1941	June 1942	1943 Apr.	1943 May	1943 June
		Cents	Cents	Cents	Cents	Cen
Grains						
Corn No. 3 Yellow, Chicago	Bu.	73.7	84.5	103.1	106.0	106.
No. 3 Yellow, Kansas City	"	---	82.3	97.8	103.5	--
Oats No. 3 White, Chicago	"	37.1	48.8	67.3	65.4	72.
No. 3 White, Minneapolis	"	33.5	45.3	61.5	61.4	67.
Barley, No. 3, Minneapolis	"	52.0	68.3	84.7	84.2	101.
Wheat No. 2 Hard Winter, Kansas City	"	97.3	110.9	138.4	138.1	137.
Rye No. 2, Minneapolis	"	56.6	60.3	80.9	87.2	94.
Byproduct Feeds						
Standard bran, Minneapolis	Ton	20.40	35.80	37.75	37.75	37.
Chicago	"	22.50	38.30	39.90	39.90	39.
Buffalo	"	24.10	40.50	41.75	41.65	41.
Standard Middlings, Minneapolis	"	22.80	37.00	37.75	37.75	37.
Chicago	"	25.00	39.05	39.90	39.90	39.
Buffalo	"	24.60	40.70	41.75	41.65	41.
Cottonseed meal, 41 pct. protein, Memphis	"	26.50	34.30	38.60	38.50	38.
Linseed meal, 34 pct. protein, Minneapolis	"	2/28.20	35.20	51.40	43.50	43.
30-32 pct. protein, San Francisco	"	32.80	41.00	52.00	43.00	43.
Peanut meal, 45 pct. protein, S. E. milling points		24.90	37.30	38.00	38.00	3
White hominy feed, Chicago	"	29.10	33.95	43.75	46.30	-
Gluten feed, 23 pct. protein, Chicago	"	20.20	27.45	32.50	32.50	32.
Tankage, digester, 60 pct., Chicago	"	56.55	72.80	3/71.05	3/71.05	3/71.
Meat scraps, Chicago	"	51.90	69.60	3/68.00	3/68.00	3/68.
Fish meal, San Francisco	"	74.60	77.50	79.50	79.50	79.
Alfalfa meal, No. 1 fine, Kansas City	"	20.30	28.80	32.90	32.90	32.
		Pct.	Pct.	Pct.	Pct.	Pct
Indexes of Feed Prices 4/						
Feed grains, United States, 1910-14 = 100		99	123	154	157	5/1
Oilseed meal, terminal markets, 1935-39 = 100		97	124	6/136	6/135	6/7/1
Livestock byproduct feeds and fish meal, terminal markets, 1935-39 = 100		135	161	8/160	8/160	7/8/1
Ten principal high-protein feeds, terminal markets, 1935-39 = 100 9/		103	130	8/142	8/140	7/8/1
Indexes of Livestock-Feed Price Ratios 10/						
Hog-corn ratio, Chicago, 1920-39 = 100		116	146	120	117	11/1
Beef-corn ratio, Chicago, 1920-39 = 100		109	117	113	112	11/1
Buterfat-feed ratio, United States, 1920-39 = 100		131	103	107	112	5/1
Egg-feed ratio, United States, 1931-40 = 100		130	121	124	125	5/1

1/ Grain prices, average for week ended June 19. byproduct feed prices as of June 1 2/ 37-percent protein. 3/ Bulk. 4/ For method and data for earlier months and yea see issues of "The Food Situation" for December 1941 and April 1942. 5/ Prelimina 6/ Partly estimated. 7/ June 15. 8/ Includes some prices for bulk sales. 9/ Re to exclude copra meal. 10/ Average for corresponding month in base period = 100. Index numbers above 100 indicate that ratios are favorable to livestock producers. See table 1, "The Feed Situation," February 1942. 11/ Week ended June 19.

THE FEED SITUATION

Copies of the annual publication

FEED STATISTICS

issued in June 1943 are available
on request at the
Bureau of Agricultural Economics
United States Department of Agriculture
Washington, D. C.

Summary

Crop prospects in early June were less favorable for feed grains than at that time in 1942, and per acre yields this year are not expected to be as large as the very high yields of last year. With about normal conditions during the remainder of the summer and with a reasonably late fall to allow late planted crops to mature, a feed supply of about 135 million tons, including wheat and rye for feed, is expected. This supply would be 12 percent smaller than in 1942-43.

Livestock numbers are increasing and the number of grain-consuming animal units on farms next January 1 is expected to be 5 to 10 percent larger than on January 1, 1943. Present indications are that feed supplies per grain-consuming animal unit in 1943-44 will be much below the average of the past 5 years and probably will be the smallest since 1936-37. Under these conditions the quantity of feed grains fed to livestock could be maintained at a level near that of 1942-43 only by reducing to a minimum stocks of feed grains at the close of the 1943-44 marketing year.

Livestock-feed price ratios continue favorable for the production of most classes of livestock and livestock products. Under normal conditions

with smaller supplies of feed per animal in prospect for 1943-44, there wou be a strong tendency for feeding ratios to adjust to lower levels, and thus encourage an orderly reduction in livestock numbers. During the past 20 year the supply of corn per hog has been closely associated with the hog-corn pric ratio. A supply of corn per hog as small as is expected for 1943-44 has been associated during the last two decades with a hog-corn price ratio considerably below the long-time average of 11.6, Chicago basis.

Receipts of corn at primary markets dropped to 2.7 million bushels for the week ended June 18, the smallest weekly movement in more than 2 years Marketings have been inadequate to meet the requirements of corn processors. Commercial stocks of corn at terminal markets have been reduced to 14 million bushels, a reduction of about 50 percent since the middle of May. An acute shortage of corn has developed in many of the deficit corn areas. Practica all of the original 225 million bushels of wheat Congress authorized for sale as feed during 1942-43 was sold before the close of May. The additional 50 million bushels authorized for sale during June is being disposed of rapidly.

— June 30, 1943

REVIEW OF RECENT DEVELOPMENTS

BACKGROUND.- Disappearance of feed grains has increased considerably during the past 2 years because of the sharp increase in livestock numbers and production. The annual supply of feed grains apparently reached a peak for the 1942-43 marketing year, but livestock production is still increasing. Government held stocks of corn have been practically depleted. Prices of feed grains and byproduct feeds advanced sharply during 1942-43, largely because of the increased demand for feed and industrial uses. Price ceilings have been set on corn and practically all byproduct feeds. Sales of these feeds in the principal markets have been at these ceilings. All of the byproduct feeds, including oilcake and meal, has been consumed for livestock feed this year about as rapidly as they have been produced.

Feed Grain Prospects Less Favorable Than a Year Ago

Wet weather has seriously delayed spring planting in several of the important feed-grain producing areas. It is estimated that nearly 4 million acres of cropland were flooded during May and that it was too late to replant the same crops on about one-third of this area. In some sections corn has been replanted two and three times while in other sections fields remained wet until it was too late to plant corn. Early maturing varieties of corn and other short-season crops will be used in many areas. Early frosts would be damaging to a number of crops this fall because of late spring plantings.

Production of oats, based upon reports of crop correspondents, is expected to total 1,169 million bushels, 190 million bushels less than was produced in 1942 but about 40 million bushels more than the 1937-41 average. Harvesting of winter oats is well under way in some of the Southern States.

Production of barley indicated for 1943 is 371 million bushels, 55 million bushels less than in 1942. This represents a drop in production of about 13 percent from last year but an increase of 30 percent over the 1937-41 average. June 1 carry-over of barley was about 104 million bushels, or about 23 million greater than last year and more than double the 1937-41 average carry-over. The total domestic supply for 1943-44 is estimated to be about 475 million bushels, which is 6.4 percent less than the supply last year.

Farm Pastures Improving; June 1 Hay Crop Condition Below a Year Earlier

Pasture conditions are improving after getting off to a late start in most parts of the country. Dry weather and late frosts held back the growth in much of the range area. Pastures are heavily stocked this spring because of the marked increase in livestock numbers on farms. Farm pastures in most areas were in better condition on June 1 than during the 1932-41 period, which includes the severe drought years. Increasing dependence upon pastures for feeding dairy cattle, as well as beef cattle and calves, will likely prevail during the remainder of the year, since prospects for ample supplies of grain and protein supplements are not as promising as last year.

The condition of the hay crop was poorer on June 1 than a year ago. The hay crop in the East is reported to be in good condition, but this is more than offset by a lower condition in the Western States. The condition of both tame and wild hay is reported higher than last year in most of the States east of the Mississippi River, with the exception of Illinois and Wisconsin where cool spring weather has retarded plant growth. Hay production will probably become more and more important to livestock producers, particularly in the Midwestern dairy area, as the supply of feed grains becomes more scarce.

Table 2.- Pasture and hay conditions on June 1, 1943, with comparisons

Region	Pasture			Tame hay			Alfalfa hay		
	Average 1932-41	1942	1943	Average 1932-41	1942	1943	Average 1932-41	1942	1943
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
N. Atlantic	78.7	91.9	93.5	77.9	91.5	93.9	82.5	93.8	88.5
E. N. Central	79.1	89.8	88.0	74.0	88.4	83.0	78.4	89.8	81.2
W. N. Central	72.2	91.4	80.1						
S. Atlantic	73.0	77.9	87.0	71.1	72.1	82.7	79.0	80.9	85.9
S. Central	74.7	83.4	82.3	72.3	76.4	79.5	75.9	81.0	79.0
Western	78.9	90.2	83.6	82.2	87.3	82.4	82.6	84.7	80.4
United States	75.7	88.4	84.3	76.0	85.8	83.9	80.2	87.5	81.2

Source of data: United States Crop Reporting Board.

Additional 50 Million Bushels of Government Wheat Made Available For Livestock Feeding; Stocks of Government-Owned Corn Practically Depleted

The Department of Agriculture was authorized by Congress to sell an additional 50 million bushels of Government-held wheat for livestock feed at prices based on the parity price of corn. Practically all of this quantity was sold by late in June. Previous authorizations had made available 225 million bushels of wheat for sale as feed since July 1942. This was all sold by the end of May except a small quantity held for emergency sales.

The quantity of Government wheat sold for feed has shown monthly increases since the first of the present calendar year, with the exception of March when sales were temporarily suspended because the quantities authorized for sale had been sold. These increases were largely due to increased demand for feed grains by livestock feeders. This demand also strengthened the market price for corn in relation to the price at which feed wheat was sold. The relatively sharp advance in the price of corn, combined with corn shortages in some areas, further stimulated the demand for Government feed wheat. Less wheat may be available for livestock feeding during 1943-44 because of expected lower production and increases in other uses.

Because of the strong demand for corn, the Commodity Credit Corporation by May 31 had sold almost all stocks obtained in settlement of loans to corn producers. There were, however, 50 million bushels of old corn of the 1938-41 crops and another 50 million bushels from the 1942 crop still under loan on that date. These loans have now been called, with settlement to be made by June 30 and July 15, respectively. Settlement may be made either by delivering corn to the Commodity Credit Corporation or by repayment of the loan. In view of the relationship between existing prices and the loan values, it is expected that very little of the corn now under loan will be delivered to the Government.

Table 3.- Wheat and corn: Commodity Credit Corporation stocks at beginning of month, and monthly sales for feed, 1942 to date 1/

Year	Stocks owned by Commodity Credit Corporation first of month		Monthly sales for livestock feed		
	Corn	Wheat	Corn	Wheat	Total in 56-pound bushels
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
1942					
Jan.	135,163	177,551	43,955	4,171	48,424
Feb.	89,862	149,441	6,817	9,947	17,475
Mar.	83,698	141,570	7,962	7,982	16,514
Apr.	77,796	130,149	4,964	4,356	9,631
May	70,924	319,685	3,363	3,787	7,420
June	66,617	312,763	3,547	5,152	9,067
July	51,212	300,427	6,526	5,828	12,770
Aug.	45,112	297,689	2,054	8,212	10,853
Sept.	42,699	296,803	86	10,071	10,876
Oct.	40,675	286,270	6,449	8,632	15,698
Nov.	30,590	269,226	447	9,271	10,380
Dec.	32,978	263,426	2,860	18,309	22,477
Total (year)			89,030	95,718	191,585
1943					
Jan.	31,547	268,312	3,917	24,533	30,202
Feb.	27,540	248,904	382	37,393	40,446
Mar.	34,264	207,230	12,632	3,033	15,882
Apr.	28,135	229,948	11,431	29,432	42,965
May	22,354	199,955	4,097	57,751	65,973
Total (5 months)			32,459	152,142	195,468
Grand total			121,489	247,860	387,053

1/ Estimated on the basis of reports from regional Commodity Credit Corporation office. Subject to revision when contracts are settled.

Demand for Corn Continues Strong

Strong demand for corn as well as other feed grains continues to dominate the current situation. During the past several weeks corn movement by rail to primary markets has fallen off to less than 3 million bushels weekly, the lowest rate in over 2 years. Commercial stocks of corn totaled only 14 million bushels on June 22, 50 percent smaller than a month earlier. Supplies of corn available to corn processors and mixed feed manufacturers are very limited.

To help relieve this situation, the War Food Administration requisitioned stocks of corn in about 90 terminal grain elevators and also announced that any farmer who, between July 1 and August 10 inclusive, sells and delivers his corn to a country elevator acting as agent for the Commodity Credit Corporation would be eligible to receive immediately the applicable ceiling price, and later, if ceiling prices are increased on or before October 31, to receive a supplementary payment equal to the difference between the price ceiling in effect at the time he sold and the highest applicable ceiling price between the date of such sale and October 31. The latter announcement was taken to remove any fears that prompt marketings might result in financial sacrifices.

Table 4.- Corn: Weekly receipts at primary markets 1/

Week ended	Average 1937-41	1942	1943
	1,000 bushels	1,000 bushels	1,000 bushels
May 7	5,657	7,420	8,513
14	5,355	7,583	5,665
21	5,106	6,559	3,909
28	5,801	4,967	3,236
June 4	5,167	5,191	3,552
11	5,545	5,273	2,968
18	4,780	5,530	2,696
25	5,252	5,147	2,582

Source of data: Food Distribution Administration.
1/ Chicago, Milwaukee, Minneapolis, Duluth, St. Louis, Kansas City, Omaha, Indianapolis, Peoria, Sioux City, St. Joseph, and Wichita. See The Feed Situation, May 1943, for earlier months.

Ceilings Established for Corn Products Used for Livestock Feed

Important corn products for animal consumption were brought under price control by the Office of Price Administration, effective June 10. The ceilings established for these corn products are based on the maximum price for corn. The products affected by this order (MPR 401) are: Ground corn, cracked corn, corn chops, corn bran, hominy feed, corn feed meal, ear corn chops, and corn germ cake and meal. The prices established by this regulation were based on maximum corn prices and were set by formula.

Regulation on Future Prices of Corn Revised

The Office of Price Administration on June 1 announced a revision in the regulation affecting corn futures, which allows those who are "long" on future contracts to exchange the future for cash corn at the track price. This action, effective June 14, made no change in the maximum price at which corn enters the ordinary channels of trade. The step was taken to enable "longs" to liquidate their futures so that cash corn, against which futures had been sold as a hedge, could be released into consumer channels.

Large Stocks of Feed Grain in Canada

Stocks of feed grains on hand in Canada on April 1 were much above average and a large carry-over into 1943-44 is in prospect. On April 1 there were 362 million bushels of oats, 135 million bushels of barley, and about 15 million bushels of rye still in farmers' hands, in spite of heavy feeding so far this year and record marketings of oats and barley. In each case this is more than three times the average stocks of these grains on farms for that date. While a larger than normal carry-over of feed grains will be needed to meet the increased requirements of livestock in Canada, large quantities of these grains will be available for shipment to the United States, and transportation probably will continue to be the limiting factor in determining the extent of such shipments. During the period August 1942-April 1943, about 31 million bushels of oats and 13 million bushels of barley were shipped from Canada to the United States.

OUTLOOK

Feed Grains: Smaller Supplies Per Animal in Prospect for 1943-44

Livestock numbers have been increasing for several years. Grain production in 1942 was very large. Production of as large a quantity of grain this year no longer seems probable. Even if yields were the same as last year the supply of feed per animal unit would not be so large, because livestock numbers are increasing. Prospective supplies of feed per grain-consuming animal unit, with various assumed yields on intended 1943 acreages, are shown in table 6. With yields about the same as the average for the years 1937-41, which might be expected if weather is favorable during the remainder of the season, there would be about .89 ton of all feeds per animal unit. This would compare with 1.05 tons in 1942-43, .67 ton in 1936-37 and an average of .98 ton in the crop years 1937-41. If yields are as good as they were last year, the feed supply per animal unit would be about 1.01 tons. With yields 10 percent below 1937-41, the supply of feed per animal unit would be considerably below average but larger than during the extreme drought years 1934 and 1936.

Table 5.- Feed supplies in relation to grain-consuming livestock, average 1937-41, annual 1936 and 1942, and prospective supplies in 1943 with varying yields

Item	Unit	Average marketing years beginning 1937-41	Marketing year beginning 1936	Marketing year beginning 1942	Marketing year beginning 1943 1/		
					With average yields for recent years	With yields: 10 percent below average	With yield same as in 1942
Feed grain supply 2/	Million tons	120.2	73.4	153.6	137.8	126.8	157.1
Byproduct feeds 3/	Million tons	9.6	9.1	13.3	13.8	13.4	14.4
Total	Million tons	129.8	82.5	166.9	151.6	140.2	171.5
Grain-consuming livestock Jan. 1 following	Million animal units	132.6	122.8	158.9	170.0	170.0	170.0
Supply of feed grains per animal unit	Tons	.91	.60	.97	.81	.75	.92
Total feed supply per animal unit	Tons	.98	.67	1.05	.89	.82	1.01

1/ Assumes that 250 million bushels of wheat and 55 million bushels of rye will be fed in 1943-44. The number of grain-consuming livestock is assumed to be 5 to 10 percent larger than a year earlier.
2/ Corn, oats, barley, grain sorghums, and wheat and rye fed to livestock.
3/ Oilseed cake and meal, wheat millfeeds, rice millfeeds, brewers' dried grains, distillers' dried grains, and gluten feed and meal.

Oilcake and Meal: Large Production of Soybean Meal

The output of soybean meal in recent months has been about double that of a year earlier. It is expected that the output of soybean meal will average about 300,000 tons monthly during the remainder of the marketing year ending September 30, 1943. Because of low prices of these feeds in relation to livestock and livestock products, an active demand probably will continue throughout the summer, even though pastures are now furnishing a considerable part of the feed for dairy cattle. Feed mixers and livestock producers are expected to continue to take these feeds as rapidly as they are produced during the summer months, and the carry-over into 1943-44 probably will be small. Commercial stocks of cottonseed cake and meal declined from 312,000 -

tons on May 1, 1942 to 39,000 tons on May 1, 1943. Data are not available for other oilcakes and meals, but trade reports indicate these also are relatively small.

Types of Feed Available May Cause a Shift in Livestock Numbers

The quantity of livestock and livestock products which can be produced in the United States will largely be determined by: (1) the kind and quantity of feed available for livestock production, (2) the labor available with which to care for the livestock, and (3) the amount and types of equipment available for livestock production. Of these three factors, feed will become more and more significant in limiting the level of livestock production during the coming year. Smaller grain supplies may make it necessary to increase the use of some crops for human food and reduce the quantity used for livestock feed. Less wheat will likely be available for livestock feeding. Hence, the production of the different classes of livestock will need to be adjusted to more nearly fit the feed supply. The fact that hay and pasture can be converted into human food only through livestock will influence the pattern of these adjustments.

Prices of Feeds

Prices of feeds are expected to remain high during the remainder of the marketing year, with corn and the byproduct feeds selling at maximum prices in the central markets. The strong demand for all feeds is expected to result in maintaining prices at uniformly high levels. A trend towards less favorable feeding ratios is a distinct possibility.

RELATION OF LIVESTOCK-FEED PRICE RATIOS TO FEED SUPPLIES AND LIVESTOCK PRODUCTION

Because of the close relationship between livestock and feed prices and feed supplies per animal, livestock-feed price ratios have acted as regulators of feed disappearance in past years. In years when feed supplies are very large relative to livestock numbers, feeding ratios become favorable for livestock and poultry producers. As a result, livestock production expands. This favorable relationship has prevailed during the past 2 years and livestock production has increased to the highest level in the history of our country.

Feed Supplies and Livestock-Feed Price Ratios in Recent Years

The relation of feed supplies and livestock-feed ratios is illustrated by the chart on the cover page showing the hog-corn price ratio and the supply of corn per hog during the past 22 years. 1/ Generally, when the supply of corn falls below 48 bushels per hog the hog-corn price ratio falls below average for the marketing year and vice versa. The correlation coefficient for this relationship is .85.

1/ Taken from the publication, "Factors Associated with Annual and Seasonal Changes in the Production of Pork and Lard," by J. Russell Ives, Bureau of Agricultural Economics, February 1943.

Table 6.- Supply of corn per hog and the hog-corn price ratio, 1926-43

Year beginning Oct. 1	Corn supply Oct. 1	Hogs on farms Jan. 1 following	Corn supply per hog	Hog-corn price ratio, Chicago Oct.-Sept.
	Million bushels	Millions	Bushels	Bushels of corn equivalent in value to 100 pounds live weight of hog
1921	1/ 3,290	59.8	55.0	16.2
1922	1/ 2,960	69.3	42.7	10.3
1923	1/ 3,000	66.6	45.0	8.7
1924	1/ 2,390	55.8	42.8	10.5
1925	1/ 2,900	52.1	55.7	16.1
1926	2,828	55.5	51.0	13.4
1927	2,833	61.9	45.8	10.0
1928	2,760	59.0	46.8	11.0
1929	2,663	55.7	47.8	11.3
1930	2,219	54.8	40.5	11.9
1931	2,744	59.3	46.3	12.2
1932	3,201	62.1	51.5	11.7
1933	2/ 2,516	58.6	42.9	8.1
1934	2/ 1,767	39.1	45.2	9.9
1935	2/ 2,333	43.0	54.3	14.1
1936	2/ 1,682	43.1	39.0	9.2
1937	2/ 2,662	44.5	59.8	14.8
1938	2/ 2,637	50.0	52.7	14.5
1939	2/ 2,620	61.1	42.9	9.6
1940	2/ 2,622	54.3	48.3	12.2
1941	2/ 2,928	60.4	48.5	15.9
1942	2/ 3,533	73.7	47.9	3/ 15.0
1943 3/	3,300	85.0	38.8	

1/ Partly estimated.
2/ Excludes corn sealed for loan or owned by Government.
3/ Preliminary estimate.

During the last 2 marketing years the hog-corn price ratio has been much more favorable than the supply of corn per hog would indicate. Probably the most important factor contributing to the very high hog-corn price ratio has been the large sale of Government corn and feed wheat at prices low enough to encourage the sharp expansion in production of hogs and other livestock. In addition, hog prices have been supported by the strong domestic demand and increased purchases for military and lend-lease uses.

Favorable ratios between egg and broiler prices and feed prices also have existed during the past year, and production of these products has increased materially. The ratio of prices of dairy products to feed prices has not been as favorable as for hogs and poultry, but nevertheless it has been above the average for recent years. Milk production has been moderately larger than in the past few years and at a record level.

Price Ratios and Livestock Production in 1943 and 1944

Without restrictions on feed or livestock prices this year or next, feed prices would advance in relation to livestock prices, which would tend to bring about an adjustment between livestock production and feed supplies. The low level of feed prices relative to livestock prices that has prevailed during 1943 has caused further increases in livestock production. Present indications are that the number of hogs on farms next January 1 will approximate 85 million head. The supply of corn per hog would be a little less than 40 bushels if the total 1943-44 corn supply is about 3,300 million bushels. Over the past 20 years a supply this small has been associated with a hog-corn price ratio averaging only 9.0 during the marketing year. A ratio this low would curtail hog production in 1943-44 by inducing farmers to decrease the number of hogs produced and to reduce the weights to which hogs are fed. This would make possible a freer movement of corn and divert a larger part of the corn supply to other livestock and corn processors. Maintaining the hog-corn price ratio above the long-time average, on the other hand, when corn supplies are relatively small, would seriously curtail the flow of corn from farms producing corn and hogs to deficit corn producing areas and to industrial users. This probably would force some liquidation of milk cows and poultry in deficit grain areas and would continue to make it difficult for corn processors to obtain supplies.

Table 7.- Livestock-feed price ratios in the United States by geographical regions, month of May, average 1937-41, 1942 and 1943

(Based on prices received and prices paid by farmers)

Ratio and year	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western	United States average
Hog-corn ratio							
Average 1937-41	10.3	11.9	12.7	8.9	8.9	10.2	11.2
1942	14.1	16.7	18.2	12.3	13.1	16.2	16.5
1943	14.0	14.0	14.6	10.4	11.0	12.8	13.6
Milk equivalent-feed ratio 1/							
Average 1937-41	1.00	1.05	1.13	1.26	1.00	1.05	1.05
1942	1.18	1.12	1.18	1.26	1.08	1.20	1.16
1943	1.21	1.25	1.25	1.37	1.15	1.31	1.24
Egg-feed ratio							
Average 1937-41	14.3	9.8	10.7	11.2	10.3	14.3	13.2
1942	15.6	12.2	13.7	12.5	13.1	16.6	15.7
1943	17.3	13.1	16.2	17.0	13.9	18.0	16.8

1/ Butterfat-feed and milk-feed ratios converted into milk equivalent-feed ratio.

Feed Price Relationships

Ceiling prices have been established for corn and practically all the byproduct feeds. All the feeds shown in table 8 have ceiling prices except oats, barley, and rye. All feeds with ceiling prices are generally selling at their ceilings. Prices of oats, bran, and middlings were high in relation to corn in May 1943, compared with the 1937-41 average, while prices of barley, rye, Government feed wheat, and the high-protein feeds were relatively low. Although there has been a strong demand for soybean meal and other protein feeds during the current marketing year, prices of these feeds have been low compared with corn, especially during the past 6 months.

Table 8.- Prices of feeds per 100 pounds and ratio of price of feed to price of corn, calendar year, average 1937-41 and May 1943

Feed	Price per 100 pounds: Calendar year average 1937-41	Price per 100 pounds: May 1943	Ratio to price of corn: Calendar year average 1937-41	Ratio to price of corn: May 1943
	Dollars	Dollars	Percent	Percent
Corn No. 3 Yellow, Chicago	1.22	1.89	100	100
Oats No. 3 White, Chicago	1.14	2.04	93	108
Barley No. 3, Minneapolis	1.25	1.75	102	93
Wheat, Government feed wheat, Kansas City	1/ 1.53	1.72	1/ 125	91
Rye No. 2, Minneapolis	1.10	1.56	90	83
Bran, standard, Chicago	1.16	2.00	95	106
Middlings, standard, Chicago	1.23	2.00	101	106
Gluten feed, 23 percent, Chicago	1.17	1.62	96	86
Soybean meal, 41 percent, Chicago	1.54	2.03	126	107
Cottonseed meal, 41 percent, Chicago	1.65	2/ 2.34	135	124
Tankage, digester, 60 percent, Chicago	2.60	3.55	213	188

1/ No. 2 Hard Winter.
2/ Nominal.

Relative Efficiency of Grain Feeding

Looking ahead to 1943-44, it will be necessary during the coming year to get the greatest quantity of livestock products possible from the supply of feed in prospect. The efficiency of livestock production as well as the type of products desired is important. While hogs are efficient in converting feed grains to total food energy and fat, they are much less efficient in producing protein than dairy cows or poultry, when both the butterfat and the nonfat solids from milk are consumed entirely for food and when both chicken meat and eggs are considered. In addition, milk and eggs provide much larger quantities of minerals, vitamin A, and riboflavin, larger quantities of which are needed to improve our national food diet. On the basis of relative efficiency in feed utilization, the maximum quantity of the types of food most needed from livestock could be produced by maintaining or increasing the quantity of grain fed to poultry for egg production and to dairy cattle producing milk to be sold as whole milk, and limiting if necessary the quantity of grain fed to hogs, beef cattle, and dairy cattle producing cream sold for butterfat. 1/

The extent of the adjustments in livestock production that will be required will depend to a considerable extent on the quantity of feed available in 1943-44. With normal weather, the supply of feed grains and byproduct feeds available for feeding in 1943-44 probably will be about 6 million tons less than the quantity fed in 1942-43 -- equivalent to about 215 million bushels less corn. Livestock numbers have been increasing since the beginning of the 1942-43 marketing year, and there will be considerably more livestock at the beginning of the 1943-44 marketing year than at the beginning of the current year. Under normal conditions the necessary adjustments in livestock to reduced feed supplies would be made largely in response to changes in the livestock-feed price ratios. With price ratios that are comparatively stable, however, adjustments to changes in the feed supply would depend chiefly on the availability of feed in the various areas.

1/ cf. "Using Resources to Meet Food Needs" by Raymond Christensen, Bureau of Agricultural Economics, May 1943.

Table 9.- Production and stocks of specified byproduct feeds, May 1941 and 1942, and March-May 1943

Item	May 1941	May 1942	1943 Mar.	1943 Apr.	1943 May
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Production					
Cottonseed cake and meal	84.3	60.7	146.4	94.0	67.6
Soybean cake and meal	---	---	314.7	358.5	---
Linseed cake and meal	---	---	61.2	58.4	---
Peanut cake and meal	13.4	1.6	11.9	8.5	5.1
Gluten feed and meal	69.6	83.8	87.2	1/ 81.1	1/ 76.5
Brewers' dried grains	11.6	14.6	19.3	18.6	18.5
Distillers' dried grains	17.3	32.2	30.9	29.1	30.2
Wheat millfeeds	358.1	333.5	481.6	414.3	2/364.7
Stocks, end of month					
Cottonseed cake and meal	254.7	286.9	39.9	37.4	36.3
Peanut cake and meal	23.8	3.9	2.3	2.7	2.5

1/ Domestic grind.
2/ Preliminary.

Table 10.- Oats and barley supplies, average 1937-41, annual 1941-43

Year beginning	Production	Carry-over Farm	Carry-over Commercial	Carry-over Total	Total supply	Total disappearance
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
	Oats					
July 1						
Average 1937-41	1,129,976	169,151	4,308	173,459	1,303,435	1,109,249
1941	1,180,663	219,406	3,906	223,312	1,403,975	1,209,468
1942	1,358,730	192,398	2,109	194,507	1,553,237	1,328,237
1943	1/1,168,850	---	---	---	2/1,393,850	
	Barley					
June 1						
Average 1937-41	285,540	43,431	6,080	49,511	335,051	274,387
1941	362,082	64,792	4,726	69,518	431,600	350,316
1942	426,150	76,743	4,541	81,284	507,434	403,395
1943	1/ 371,044	95,272	8,767	104,039	475,083	

1/ June 1 indications.
2/ Preliminary estimate.

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